

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of :	)	
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Miller, et al.	)	Examiner:
	)	
	)	
Serial No.:	)	Art Unit:
	)	
Filing Date:	)	
	)	
	)	
A Continuation of Application:	)	
	)	
Miller, et al.	)	
	)	
Serial No.: 09/437,996	)	
	)	
Filing date: November 10, 1999	)	
	)	
For: DETAILED PLACER FOR OPTIMIZING	)	
HIGH DENSITY CELL PLACEMENT IN A	)	
LINEAR RUNTIME	)	
	)	

PRELIMINARY AMENDMENT

Commissioner of  
Patents and Trademarks  
Washington, D.C. 20231

Dear Sir:

Please enter the following amendments to the above referenced continuation patent application.

## IN THE CLAIMS

Please amend the following claims as indicated below:

Please cancel Claim 1 without prejudice.

Please add the following new claims.

--58. A method for placing cells of a netlist, comprising the steps of:

receiving said netlist which describes a circuit to be fabricated on a semiconductor chip, said netlist specifying a particular group of cells and wire connections between said cells;

receiving a specification of a placement area describing a plurality of sites on said semiconductor chip where said cells may reside;

performing a coarse placement process which assigns initial locations to said cells;

performing a detailed placement process which assigns a legal location to each of said cells;

performing a synthesis process.

59. The method of Claim 58, wherein the detailed placement process is limited to only performing legalization such that said cells are assigned to legal sites without violating constraints set forth in said specification of said placement area.

60. The method of Claim 59, wherein said detailed placement process snaps cells into said legal sites.

61. The method of Claim 59, wherein said detailed placement process moves cells a minimum distance to achieve said legalization.

62. The method of Claim 58 further comprising the step of iterating said detailed placement process and said synthesis process a plurality of times.

63. The method of Claim 58, wherein said synthesis process is timing driven.

64. The method of Claim 58, wherein said coarse placement process is congestion driven.

65. A method for placing cells of a netlist, comprising the steps of:  
performing a detailed placement process which is limited to only assigning legal locations to said cells;  
performing a synthesis process;  
repeating said detailed placement process and said synthesis process a plurality of times for convergence.

66. The method of Claim 65, wherein said detailed placement process snaps cells into said legal sites.

67. The method of Claim 65, wherein said detailed placement process moves cells a minimum distance to achieve said legalization.

68. The method of Claim 65, wherein said synthesis process is timing driven.

69. The method of Claim 65 further comprising the step of performing a coarse placement process before said detailed placement process and said synthesis process.

70. The method of Claim 69, wherein said coarse placement process minimizes wire length.

71. A method for placing cells of a netlist, comprising the steps of:  
performing a detailed placement process having a primary function of legalization, wherein said cells are placed in legal sites;  
performing a synthesis process, wherein said synthesis process is timing driven;  
integrating the detailed placement process with the synthesis process.

72. The method of Claim 71, wherein the detailed placement process only performs legalization.

73. The method of Claim 72, wherein said detailed placement process snaps some of said cells to legal sites.

74. The method of Claim 73, wherein said detailed placement process moves some of said cells a minimum distance for legalization.

75. The method of Claim 71, wherein said detailed placement process and said synthesis process are integrated by iteratively repeating said detailed placement process and said synthesis process a plurality of times to achieve convergence.

76. The method of Claim 71 further comprising the step of performing congestion driven placement.

77. The method of Claim 71, wherein said synthesis process minimizes wire length. --

REMARKS

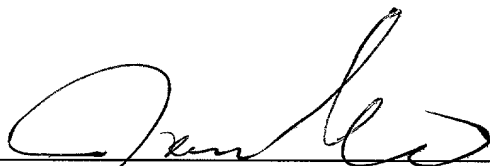
Applicants respectfully request entry and consideration of the amended claims in the continuation application.

If there are any additional charges, please charge them to our Deposit Account Number 23-0085.

Respectfully submitted,

WAGNER, MURABITO & HAO

Date: 10/11, 2001



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